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## Hetch Hetchy: To Drain or Not to Drain

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# Hetch Hetchy: To Drain or Not to Drain

## *Moderator*

PROF. BRIAN GRAY, U.C. HASTINGS COLLEGE OF THE LAW

## *Panelists*

DAVID BEHAR, SAN FRANCISCO PUBLIC UTILITIES COMMISSION

HEATHER DEMPSEY, TUOLUMNE RIVER TRUST

RON GOOD, RESTORE HETCH HETCHY

RAY McDEVITT, HANSON BRIDGETT MARCUS VLAHOS RUDY, LLP

GRAY: I'd like to introduce our four panelists: Ron Good, from Restore Hetch Hetchy<sup>1</sup>; David Behar, from the City of San Francisco; Heather Dempsey, from Tuolumne River Trust; and Ray McDevitt, from the Bay Area Water Supply & Conservation Agency. I will briefly introduce each of them before we begin.

While Ron was in college at Ohio State, he participated in the first Earth Day activities in 1970 and then began volunteering for the Sierra Club. He was hired as a staff lobbyist for the Ohio chapter of the Sierra Club and later worked at the Club's headquarters in San Francisco. In 1997, he was appointed as the Chair of the Sierra Club's Hetch Hetchy Restoration Task Force. Two years later, the Task Force decided to create a separate, nonprofit organization, Restore Hetch Hetchy, to generate grassroots support for restoring Yosemite National Park's Hetch Hetchy Valley. Ron was the first Chair of the Board of Directors of Restore Hetch Hetchy. In July 2001, he was hired as the Executive Director. Ron lived in Yosemite Valley for four years. Now he lives in the foothill community of Sonora, in Tuolumne County, right next to Yosemite National Park.

David Behar joined the San Francisco Public Utilities Commission<sup>2</sup> (SFPUC) in August of last year. He serves as Deputy to the Assistant

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1. See generally Restore Hetch Hetchy Home Page, <http://www.hetchhetchy.org> (last visited Apr. 29, 2006).

2. See generally San Francisco Public Utilities Commission Home Page, <http://sfwater.org> (last visited Apr. 29, 2006).

General Manager for Water Enterprise. Water Enterprise manages Hetch Hetchy water and power facilities and operations and delivers quality river water to approximately twenty-four million residents of the Bay Area. Before joining the SFPUC, David was an environmental policy consultant whose clients included the National Resources Defense Council<sup>3</sup> and the Pacific Rivers Council.<sup>4</sup> From 1991 to 1997, he served as executive director of the Bay Institute of San Francisco,<sup>5</sup> where he helped to negotiate the Central Valley Project Improvement Act ("CVPIA"),<sup>6</sup> protected the fisheries of the Bay Delta ecosystem under the federal Endangered Species Act,<sup>7</sup> and negotiated the Bay Delta Accord.<sup>8</sup>

Heather Dempsey is a Bay Area Program Director for the Tuolumne River Trust,<sup>9</sup> which is dedicated to protecting the stewardship of the Tuolumne River and its tributaries to ensure a healthy watershed. Heather previously served as Grant Manager for the National Fish and Wildlife Foundation,<sup>10</sup> and she has worked with the California Resources Agency.<sup>11</sup> Heather received her Masters in Environmental Management from the Yale School of Forestry & Environmental Studies, with a focus on large-scale conservation.

Finally, Ray McDevitt is a partner of Hanson Bridgett Marcus Vlahos Rudy, LLP in San Francisco, where he specializes in water resources, public utilities, solid waste management, public construction, and environmental law. Ray was a law clerk to Justice Ray Sullivan on the California Supreme Court. He has served as Associate General Counsel with the Environmental Protection Agency in Washington.<sup>12</sup> For the past decade Ray has also taught local government law at University of San Francisco Law School. Ray is counsel to the Bay Area Water Supply and Conservation Agency (BAWSA),<sup>13</sup> a consortium of twenty-

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3. See generally NRDC: Natural Resources Defense Fund, [www.nrdc.org](http://www.nrdc.org) (last visited Apr. 29, 2006).

4. See generally Pacific Rivers Council, <http://www.pacrivers.org> (last visited Apr. 29, 2006).

5. See generally Bay Institute, <http://www.bay.org> (last visited Apr. 29, 2006).

6. Pub. L. No. 102-575, 106 Stat. 4706 (1992).

7. 16 U.S.C. §§ 1531-1544 (2000).

8. The Bay Delta Accord, signed by both state and federal representatives in 1994, implemented a Bay Delta protection plan. Principles for Agreement on Bay-Delta Standards Between the State of California and the Federal Government, U.S.-Cal., Dec. 15, 1994, <http://calwater.ca.gov/Archives/GeneralArchive/SanFranciscoBayDeltaAgreement.shtml>.

9. See generally Tuolumne River Trust, <http://www.tuolumne.org> (last visited Apr. 29, 2006).

10. See generally National Fish and Wildlife Foundation—Home, <http://www.nfwf.org> (last visited Apr. 29, 2006).

11. See generally Office of the Secretary—California Resources Agency, <http://resources.ca.gov> (last visited Apr. 29, 2006).

12. See generally U.S. Environmental Protection Agency, <http://www.epa.gov> (last visited Apr. 29, 2006).

13. See generally Bay Area Water Supply and Conservation Agency, <http://bawua.org> (last visited Apr. 29, 2006).

eight cities and water agencies that supply water to more than 1.7 million customers in San Mateo, Santa Clara, and Alameda counties. The BAWSCA cities and agencies are the largest purchasers of water from the Hetch Hetchy project.

GOOD: Hetch Hetchy Valley is in Yosemite National Park. There are two major river systems in the Park. First is the Merced River, going down through Yosemite Valley, past Half Dome, and outside the park. The other major river system in the park is the Tuolumne. The Lyell Fork and the Dana Fork of the Tuolumne River come together in Tuolumne Meadows.

There are wonderful waterfalls and cascades on the Tuolumne. John Muir said that there are so many cascades and waterfalls on the Tuolumne that they surpass any other river system in the whole Sierra Nevada mountain range in beauty and glory. Waterwheel Falls in Tuolumne Canyon has twenty or thirty spinning and gyrating water wheels. It's just one of the most incredible places on Earth. John Muir said it's full of mountain energy.

Two major physical factors have formed the Hetch Hetchy Valley and the Yosemite Valley: water and ice. Water comes from sources such as the Tuolumne River and ice from glaciers. After thousands of years the rivers cut deep, v-shaped valleys and river canyons. Then, about one million to two million years ago, the glaciers formed and they opened up those v-shaped canyons. The glaciers melted away about 10,000 years ago, leaving broad, open, u-shaped, classic, glacial-formed valleys in Hetch Hetchy Valley and Yosemite Valley. There were several glacial periods, but the last one left Yosemite and Hetch Hetchy Valleys about 10,000 years ago.

Soon after that time, Native Americans began to filter in to Hetch Hetchy Valley and Yosemite. Native Americans had a strong presence in Hetch Hetchy Valley and Yosemite in the early 1900s. The oak trees were very important to Native Americans because the trees provided acorns. Native Americans used a pounding rock to make acorn mush. They were able to make water-tight baskets. They used hot boiling water and cold water in the cooking process. Now how in the world did the Native Americans boil water? They didn't have metal pots. If they put the baskets on the fire, they'd burn up. Instead, Native Americans used hot rocks. They would put rocks and stones down in the fire. The fire would heat up the rocks. Native Americans would use sticks to drop the stones in the water, which would then start boiling. So it's kind of a nice image for us water-in-the-twenty-first-century folks. If you can't do something directly, maybe you can do it indirectly, like the Native Americans.

Mortar holes have been left over by the Native American women.

Imagine what a social event it must have been for women to sit together, swap stories of the day, and grind the acorns into a meal. It was a very lengthy process.

In the mid-1800s, the Yosemite region changed dramatically because of the Gold Rush. On October 1, 1890, Yosemite National Park was created by an act of Congress. The Park's boundaries were originally drawn mostly by John Muir. Muir felt that our national parks should be pleasure grounds for the people's enjoyment, and that commercial activities should not take place in national parks.

The other major philosophy that grew up around this time was embodied by Gifford Pinchot, a good friend of Muir for a while. Pinchot was also a good friend of President Theodore Roosevelt, as was Muir. Pinchot was a utilitarian. In other words, he felt our natural resources, even those in the national parks, should be utilized for our human purposes: grasslands for cow grazing, timber for building homes, and rivers for municipal water supplies. Almost 100 years ago, in April 1906, a major earthquake hit San Francisco, and a great debate ensued. What to do with Hetch Hetchy had been debated before that. San Francisco had a proposal to build a dam and a reservoir in the national park.

The debate went through three presidential administrations: Theodore Roosevelt's, William Howard Taft's, and Woodrow Wilson's. During Wilson's election, the Republican Party was split. Roosevelt headed up the Bull Moose party, and Taft headed up the regular wing of the Republican Party. Because the Republican Party was split off in two parts, Woodrow Wilson waltzed in as a Democrat. Along with President Wilson came Franklin Lane, the City Attorney for the City of San Francisco. Lane became the Secretary of the Interior, and had tremendous influence over the discussion on using Hetch Hetchy as a reservoir site.

The Raker Act<sup>14</sup> was passed in 1913 after a long debate, and it took several years to construct the dam. The Hetch Hetchy Railroad was used in the construction of the O'Shaughnessy Dam. A book by Ted Wurm called the *Hetch Hetchy and Its Dam Railroad*<sup>15</sup> contains a lot of old photos of the railroad and construction. The dam was completed by 1923. A cap was put over the older 1923 version and the reservoir was raised.

Where are we today with the O'Shaughnessy Dam and Reservoir? Hetch Hetchy Reservoir is the twentieth largest reservoir in the state of California. I like to call it the O'Shaughnessy Reservoir, not the Hetch Hetchy Reservoir, because Hetch Hetchy is a valley, not a reservoir.

Hetch Hetchy is the least-visited place in Yosemite National Park.

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14. The Raker Act was an act of Congress that cleared the way for the O'Shaughnessy Dam to be built and Yosemite Valley to be flooded. Pub. L. No. 63-41, 38 Stat. 242 (1913).

15. TED WURM, *HETCH HETCHY AND ITS DAM RAILROAD* (Trans-Anglo Books 1990) (1973).

About 50,000 people a year come to the Hetch Hetchy region, and about 3.5 million people come to the rest of the park. So about 1.5% of the people who come to the rest of the park come to Hetch Hetchy.

A big sign as you enter the Hetch Hetchy gate says "Day use hours only, seven a.m. to five p.m." You have to get out at five o'clock because the gate is locked at night. We believe that our national parks should be able to be used, appreciated, and enjoyed by American people. It's the only national park gate that's locked like this at night, and the only national park gate where your license plate number is written down if you go into it.

Restore Hetch Hetchy is advocating for a win-win outcome. A win for Yosemite National Park, and a win for all the other state corps involved in the situation. Who are the state corps? They are: Yosemite; San Francisco water and power users; the suburban water users; the Turlock and Modesto irrigation districts; the Native Americans; and boating and water interests in Tuolumne County.

What are the win-win issues? What are the issues out there that people are concerned about? One is water quantity: to ensure that enough water comes to the Bay Area and the irrigation districts. Matter is neither created nor destroyed in chemical processes. So, water is not going to be destroyed without the O'Shaughnessy Dam. The O'Shaughnessy Dam doesn't make it rain. The O'Shaughnessy Dam doesn't make it snow. We're going to have exactly the same amount of water that we have with or without the O'Shaughnessy Dam. We can restore the dam in other places outside the Park.

Water quality is also very important. Restore Hetch Hetchy and Environmental Defense have both advocated filtering the Hetch Hetchy water system to make it cleaner.

Another issue is electrical power. We need to make sure that electric power continues to flow through the Bay Area and the irrigation districts. We have a specific plan on how to do that.

Restore Hetch Hetchy also focuses on water and power revenues in San Francisco. Let's say you were to rent out Yosemite Valley for a year. How much might you pay for a year? Well, Hetch Hetchy has been rented by San Francisco since 1938, for the price of \$30,000 a year. It tries to get about forty or fifty million dollars from the sale of the water and power, so it is a pretty good deal for San Francisco. But making sure those revenues continue to come to the Bay Area is an issue we have to deal with in our restoration work.

Another issue that we have to be concerned with is Native American cultural sites. It is important that the cultural sites not be destroyed.

We believe there are winning opportunities for San Francisco. Two of the other major state corps—the foster and irrigation folks—are

basically at the point of saying that as long as they are not injured, that they will be okay with the idea. We're hoping that San Francisco will get to that point in the near future as well. The City can receive state and federal money to help them pay for \$4.3 billion in capital improvements. They can have a more reliable and cleaner water system, they can get good publicity and the good will of the American people, and increase travel and tourism. Tourism is probably the number one industry here in San Francisco. I saw a newspaper ad placed by Gavin Newsom, the Mayor of San Francisco, and John Morris, the President of the San Francisco Convention Bureau, saying that San Francisco needs travel and tourism because it's a major industry. We think people from all over the world will flock to Hetch Hetchy to see it.

Several engineering studies have looked at the restoration of Hetch Hetchy Valley. In 1988, President Ronald Reagan's Secretary of the Interior, Don Hodel, asked the Bureau of Reclamation to take a look at this, and they issued a preliminary study.<sup>16</sup> In 2003, UC Davis' Dr. Jay Lund and graduate student Sarah Null worked on a study.<sup>17</sup> In 2004, Environmental Defense completed a wonderful study by their own staff and consultants whom they hired.<sup>18</sup> And in 2005, we published our report.<sup>19</sup>

Where are we today? In 2004, Governor Schwarzenegger announced his Department of Water Resources would research the studies that have been done. They were not going to do independent research, but they were at least going to look at the Bureau of Reclamation study, the UC Davis study, our study, the Environmental Defense Study, and information from the SFPUC. The Citizens' Advisory Committee of the SFPUC voted ten to one to encourage the SFPUC to cooperate with the Governor's study and all other public studies that are done. This Citizens' Advisory Committee is not composed of environmentalists like myself. They are appointed by the Mayor and Board of Supervisors, and they voted ten to one to encourage cooperation.

GRAY: Ron, thank you. David, I hope you will tell us a little bit about the cost of dam removal, restoration, treatment costs, and lost power revenues. I know Ron was probably going to get to that. It'd be nice to get those facts out on the table.

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16. U.S. BUREAU OF RECLAMATION, HETCH HETCHY WATER & POWER REPLACEMENT CONCEPTS (1988), available at [http://www.hetchhetchy.org/pdf/reclamation\\_water\\_replacement\\_body.pdf](http://www.hetchhetchy.org/pdf/reclamation_water_replacement_body.pdf).

17. Sarah E. Null & Jay R. Lund, *Re-Assembling Hetch Hetchy: Water Supply Without O'Shaughnessy Dam*, 47 J. AM. WATER RESOURCES ASS'N 395 (2006).

18. SPRECK ROSENKRANS ET AL., *PARADISE REGAINED: SOLUTIONS FOR RESTORING YOSEMITE'S HETCH HETCHY VALLEY* (2004), available at <http://www.environmentaldefense.org/hetchhetchy/article.cfm?contentID=4027>.

19. GERALD H. MERAL, *FINDING THE WAY BACK TO HETCH HETCHY VALLEY* (2005), available at [http://www.hetchhetchy.org/pdf/restore\\_hh\\_full\\_report\\_sept\\_2005.pdf](http://www.hetchhetchy.org/pdf/restore_hh_full_report_sept_2005.pdf).

BEHAR: I'll do that. My name is David Behar and I'm with the water enterprise at SFPUC. Would someone with experience as an environmental leader have been representing the San Francisco SFPUC a couple years ago? Would I even have been working at the SFPUC in a management position a couple of years ago? The answer is probably no. The reason is that things are changing at the San Francisco SFPUC. An increasing amount of emphasis is being placed on environmental stewardship issues under the administration of Mayor Gavin Newsom and SFPUC's new general manager, Susan Leal, who started a little over a year ago. We have significant influence in three major watersheds: the Tuolumne, Alameda Creek, and the Peninsula. I think people would have legitimately questioned how serious our environmental commitment might have been in the past to those watersheds. I think that the SFPUC is committed to a greater extent than before.

For example, last year, the Fourth Barrel Project on the San Joaquin, which would have considerably increased the ability of the SFPUC to take water out of the Tuolumne River, was part of our water system improvement plan project. However, it was dropped under pressure from Tuolumne River Trust and other organizations. But the administration, after forty years of attempting to get that project built in San Francisco, decided we didn't really need that project because we can meet our increasing water demands in other ways. I think that was a major step forward in assuring people that Tuolumne River resources are going to be more protected than they would have if that project had been built. Historically, when San Francisco needed more water because its customers demanded it, as they do today, they would do one thing: go to the Tuolumne River and take it. San Francisco has considerably more rights to that water than it's using today under the Raker Act. So, why not just go take it? Well, in today's environment, that's not an automatic response. A lot of people think that we should find other ways to meet water demands, and the SFPUC is actually trying to find other ways to meet its increasing demands. Recycled water, conservation programs, and groundwater use are all on the table as potential methods to meet San Francisco's and our customers' increasing demands.

The SFPUC is a broadly diverse water agency. We provide water to 2.4 million people in the Bay Area, which is about a third of Bay Area water customers. San Francisco customers are actually the minority of our customers. The majority are in Alameda, San Mateo, and Santa Clara counties. Hetch Hetchy Reservoir makes up about forty percent of the water supply. That storage makes up about forty percent of the water supply in this 160-mile system of reservoirs, pipes, tunnels, treatment plants, etc. between the Sierra and the Peninsula watershed. About eighty-five percent of the water supply comes from the Sierra and about forty percent of the total storage in the system is in Hetch Hetchy.



The water in Hetch Hetchy is so clean that, with EPA's permission, it is effectively exempt from filtration requirements. There are very few urban areas in the country that are exempt from those filtration requirements. We treat the water. But because it's so clean, we don't have to filter it, as does virtually every other system in the country. The engineering marvels of the system are many. I want to just focus on one. Our system is entirely gravity-fed. From the top of the watershed to your tap, there are no significant pumps that move that water around. In a state where about ten percent of our energy is actually used to move water, that's a fairly remarkable system. Virtually no energy is needed to move the water around in this system. Two characteristics of the system that would be largely lost without Hetch Hetchy are its extreme cleanliness and its extreme efficiency. I think that's something to think about, especially if you consider global warming.

The most important new thing going on at the SFPUC right now is the Water System Improvement Program (WSIP). The WSIP is the central project of the water system that is intended to address seismic upgrading, replacement of aging facilities, and increasing the redundancy of the system so we can do maintenance over time. It's been a long-deferred program over previous decades. Past administrations let things slide a little bit. I don't think it's a bad thing to talk about that, because it's recognized. This administration's not doing that anymore. It's committed to getting this project done. The project is just getting underway now. The program will cost \$4.3 billion, making it the largest capital improvement program currently going on in any western utility.

So the idea of draining Hetch Hetchy and tearing down O'Shaughnessy Dam is prominent right now in the media, and among some, but far from all, of the environmental community. There's been a lot of discussion about how much it will cost. Restore Hetch Hetchy has said around one billion dollars, not including the cost of removing the dam. Environmental Defense has published a range between half a billion and \$1.5 or \$1.6 billion, and that doesn't include restoration parameters. Our general manager, Susan Leal, said she thought it would cost more than ten billion dollars to replace Hetch Hetchy. It's not just replacing a reservoir. About fifteen to twenty-five major capital projects would be required.

Why are the numbers so widely divergent? To answer, I want to just examine one element of the costing situation, and that is replacement of surface water storage. Hetch Hetchy holds 360,000 acre-feet that would be gone without a dam. How would we replace it? Both Environmental Defense and Restore Hetch Hetchy have cited an enlarged Calaveras Reservoir, right in the middle of the system. It holds about 97,000 acre-feet right now and the Sunol Valley Water Treatment Plant is right there. It is a critical lynchpin for a lot of reasons in the water system, and it can

be enlarged. And both Environmental Defense and Restore Hetch Hetchy have looked at that idea as one of the main ways we could replace Hetch Hetchy. If O'Shaughnessy was to come down, I agree that it probably would be a logical place to look for increased storage.

I want to look at how much it would cost to do that and how much it would cost to get water into that system because I think it bears on the number very directly. To expand Calaveras to approximately 400,000 acre-feet and provide conveyance to the system, Environmental Defense's number, at the low end, is \$199 million. These are costs that they base in part on numbers that we published a number of years ago that are outdated. I think everybody, including Environmental Defense, acknowledges they are outdated. The accurate numbers for expanding Calaveras, providing conveyance, and soft costs, which include management, mitigation, and design engineering total about \$1.5 billion—more than seven times as much.

That's only part of the picture, though. There's a lot of talk about how we would raise the money: general obligation bonds, appropriation by state or federal legislatures, and even private fundraising have been suggested by some. You have to understand the effect of inflation or escalation, as used in the construction industry, to know how much money you actually need to raise. You can't use a bond for \$1.5 billion and do these projects, because by the time you get done with them, they're not going to cost \$1.5 billion. They're going to cost \$1.5 billion plus the escalation amount and about \$870 million in costs associated with twenty years of planning and construction. So the project delivery cost for Calaveras and the conveyance is \$2.374 billion. Furthermore, you need to pump water in from elsewhere in order to build a large reservoir and get it filled at Calaveras. In our view, and the view of our engineers, the only way to do that is to build a fourth barrel. That would add another \$567 million.

Now I want to say, in Environmental Defense's defense, that their numbers were in part based on old numbers that we published. The numbers were completely legitimate at a time when we were preliminarily looking at what these facilities would cost. For the water supply improvement plan, internationally renowned consultants have developed the actual costs to a much greater level of detail. Those numbers are accurate. However, Environmental Defense has not changed their overall number in the public realm. I don't know if they've changed it internally or not. So when you hear Environmental Defense's numbers, \$500 million to \$1.5 billion for total cost, you need to know they included these outdated numbers. Obviously there's a problem, because just doing Calaveras and the fourth barrel to fill it would cost \$1.5 billion alone, never mind the other fifteen major projects that would be needed.

Would draining of the reservoir and incorporation of Hetch Hetchy Valley into the mainstream of the national park system actually be good for the environment? It might seem like a shocking question. Perhaps it seems like an easy answer. Maybe it is not as easy as it seems. Let's look at what's there now. From an environmental perspective, on the negative side is that we have 900 acres of flooded valley floor. What was once a river, is now a reservoir. A river runs through the reservoir that delivers water to your tap. Unless you get your water out of the ground, you're getting your water out of a submerged canyon. On the positive side, you've got another 290,000 acres virtually untouched for 100 years. It's been preserved as a water-supply watershed. That's 99.7% of the watershed lands. They're virtually roadless. There are no unpaved roads to cause sedimentation and erosion, no RV parks, no buses, no hotels, and no vault toilets. There's no development at all. The area is a federally-designated wilderness. There are huge stands of uninterrupted old-growth forests, including black oak, red fern, pine, and alpine species. Mammals that thrive there include black bear, mule deer, and mountain lions. There are also a couple of endangered species. One is the mountain yellow-legged frog. They were once widely dispersed throughout the Sierra Nevada, but today its population is down ninety-five percent in the Yosemite Valley. Another is the Sierra Nevada bighorned sheep. About ten percent of the remaining individuals of that species actually live in Hetch Hetchy Valley or cross its borders regularly. There are about 300 left. They have actually been negatively impacted by human contact already, with the one highway that goes through the system, Highway 120.

Today's visitation to that valley is about 50,000 people. That is not a lot. But 50,000 people do go up there to enjoy the resources available there. Restore Hetch Hetchy's reports suggest that at least several hundred thousand people would visit a restored Hetch Hetchy Valley each year. Personally, I think this number is low. As Ron said, 3.5 million people go to Yosemite Valley every year. Hetch Hetchy is right next door, so maybe it would get more visitation. We also know that tourism and visitation levels in the national park system have had a negative impact in many cases on the environment in those parks.

According to the National Park Conservation Association, a nonprofit advocacy group, national parks today face serious threats, including skyrocketing visitation, air pollution, habitat loss, degradation and fragmentation, and excessive road building. The response to that is that this park will be different, or this part of the park will be different, under a restoration scenario. That may be true, but it may not be true. What is true is that nobody knows what will go on. I would bet that if Congress, or the state legislature, or some combination, spent several billion dollars or more to restore the system, they're going to have a hard

time locking people out. I'm not sure there are too many public projects of that scale where the public is not allowed in.

The goal for some is recreational use of the parks. Is there recreation today in the Valley? There is in fact a lot of it, and it's the kind of recreation that's appropriate to a wilderness area. There are a tremendous amount of recreational opportunities like Rancheria Falls and trails to Lake Vernon and Laurel Lake. These are spectacular areas, virtually untouched, and available to folks. I urge you to go up there and see what this wilderness is like today.

If this were 1913, I expect many of us here would be standing with John Muir on the question of whether to keep Hetch Hetchy Valley intact. Today, however, with (1) 2.4 million people dependent on this reservoir for clean drinking water and clean power; (2) the rest of the state increasingly facing pressure to build more storage; (3) recent modeling indicating that global warming could reduce yields in all of our water systems in the future throughout the West; (4) wilderness values powerfully preserved for 99.7% of the Hetch Hetchy watershed's lands; and (5) a severe scarcity of restoration dollars available to address environmental concerns, is restoring the Hetch Hetchy Valley the right idea for the people of California? Is it a good idea for the customers of the SFPUC? Is it the best use of our limited ecological restoration dollars? One notable environmentalist who knew the Hetch Hetchy Valley as it exists today, said no. Galen Rowell, a renowned nature photographer, confidante of Sierra Club legend David Brower, and an environmentalist, said,

I don't share the common view of Hetch Hetchy as merely a flooded, ruined Yosemite. This image purposely emphasizes Hetch Hetchy's natural splendor and diminishes perception of the unnatural reservoir in the distance. I see Hetch Hetchy this way because of something that happened one morning about twenty years ago when I awoke there in the middle of a sheer cliff during a first ascent. Below me was the valley floor, but with no roads, buildings, campfires, or smoke. I heard no horns, motors, or voices. I found myself actually preferring Hetch Hetchy's flood of water over Yosemite Valley's flood of people.<sup>20</sup>

GRAY: Thank you, David. Before we move on, I just want to give Ron a minute or so to respond to what David was saying.

GOOD: Regarding the pumps: San Francisco currently has several pump stations in its system. So it's certainly true that we have advocated the use of pumps. But for every unit of electricity that is used for a pump, we estimate six units of electricity can be gained by some of the engineering configurations we have proposed.

Regarding cost: We've heard several cost figures from the SFPUC.

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20. JOHN MUIR, *THE YOSEMITE* (Sierra Club Books 1990) (1912).

When Ms. Leal was at the Commonwealth Club last year, she stated fifteen billion dollars, but now it's scaled back to ten billion dollars, as far as I know. Their cost figures are just unbelievable, and this is the first time we've seen these numbers.

Would Yosemite National Park be better off with a restored Hetch Hetchy Valley? It's hard for me to think, or anybody to think and say with a straight face, that Yosemite National Park wouldn't be better off with a restored Hetch Hetchy Valley. You can't go in there at night. If these wonderful things that Dave talked about are good for Hetch Hetchy Valley, then maybe the remedy for Yosemite Valley should be the same. Let's flood Yosemite Valley and make it just as wonderful as Hetch Hetchy Valley is today. By the way, Galen Rowell is on our advisory committee.

BEHAR: I'd like to respond to that rebuttal. These numbers are detailed, consultant reports on Calaveras. I think Ron needs to come back to the presentation I made and rebut those costs. I'll stand behind them, and we'll go into them in detail. But these are detailed analyses of this one element. I think that demonstrates that if these numbers are true and Calaveras is an important part of any storage system, then the numbers that Ron presented are off the mark.

GRAY: All right, thank you. Heather, the program literature for the Tuolumne River Trust says that it is the only environmental organization that considers the uses and interests of the Tuolumne River watershed as a whole, including its tributaries. Hopefully you can talk about a broad, or different, perspective from that of Restore Hetch Hetchy.

DEMPSEY: I'm really excited to talk to you about the Tuolumne River. I would like to expand what you've heard about the river. You have heard about the wonderful aspects of the river within Yosemite National Park, but I would like to give you a bigger picture of what the river is all about. I'll start with a little bit about what the Tuolumne River Trust is, and then discuss our perspectives about restoring the valley and about the San Francisco capital program they're embarking on right now.

The Tuolumne River Trust promotes stewardship of the entire Tuolumne River watershed and its tributaries to ensure a healthy watershed. It's the only organization working on an entire watershed. We serve a very diverse geographic area, from the Sierras to the Central Valley, linking the rural, suburban, and urban communities that rely on the river. We have a long history of success. We were first founded in 1981, and we achieved "Wild and Scenic" designation under the Wild and Scenic Rivers Act<sup>21</sup> for the upper eighty-three miles of the river in

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21. 16 U.S.C. §§ 1271-1287 (2000). Section 1271 provides that "selected rivers . . . with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that

1984. In the mid-1990s, we successfully defeated a hydroelectric dam project on the Clavey River. In 1993, we intervened in the New Don Pedro Dam relicensing process in order to win higher flows for salmon for the lower river. We now have about 2000 members, offices in Sonora, Modesto, and San Francisco, and five full-time staff. We work through public education and cooperative programs, we do grass-roots organizing and, when necessary, we pursue litigation.

The Tuolumne River is the largest drainage point in the San Joaquin. It is 162 miles long. It drains from Yosemite through the Stanislaus National Forest,<sup>22</sup> through the foothills, then into the Central Valley, right through Modesto, and then joins with the San Joaquin River and heads to the delta. The watershed supports five major plant communities, including sub-alpine and mixed conifer. There are over 400 animal species found within the watershed, including bald eagle, spotted owl, bobcat, steelhead, rainbow trout, and Chinook salmon. The Chinook salmon run in the Tuolumne is the largest wild salmon run in the San Joaquin. It's important to note that over half of the Tuolumne's natural runoff is diverted. About eighty percent is used for irrigation and twenty percent for municipal use here in the Bay Area.

The Tuolumne River Trust has three major program areas. In the Central Valley, our work is focused on land conservation, riparian habitat restoration, and expanding the flood plain of the river. We're also working hard to connect folks to the river through on-the-ground restoration and outdoor classroom programs. In the Sierra Nevada, we're focused on permanent protection for the Kaweah River through a Wild and Scenic designation. The Bay Area program is the newest program for the Tuolumne River Trust. We became involved because of some of the SFPUC proposals to divert more water from the Tuolumne, like the new pipeline that David mentioned.

The pipeline would have been the fourth San Joaquin pipeline and would have run underneath the entire San Joaquin Valley. We have previous cost estimates of \$500 million and it would have increased the SFPUC's ability to divert up to fifty percent more water from the Tuolumne. We tried to stop that proposal through long-term advocacy, and the SFPUC eventually did drop the pipeline proposal. We supported that decision. But David failed to mention that the SFPUC did not change their plans to divert more water from the Tuolumne. Right now, their proposal is to divert an additional twenty-five million gallons per day from the Tuolumne. That's about 28,000 football fields covered in a foot of water, or enough water to cover the entire City and County of

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they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

22. The Stanislaus National Forest includes twenty-seven miles of world-class whitewater.

San Francisco in about a foot of water.

We're still very focused on stopping this threat of new diversions. We are asking that the SFPUC invest more money in its watershed stewardship, not just in the Tuolumne within Yosemite, but also in the Bay Area. We also would like to see all the importers of Tuolumne water increase their conservation and water use efficiency. There are new conservation programs, but we have a long way to go to use our water wisely.

We're also requesting that San Francisco look at their stream flows, and how they're affecting the Tuolumne River. The importance of a natural flow regime cannot be overstated. Having a flow regime in the Tuolumne that mimics, or is close to a natural flow regime, is a key ingredient to its health. The different flows and seasonal variation provide critical functions and health factors. They provide triggers for new life phases within the river, move gravel, and shape the stream channel; all very important functions that need to be examined. Restoring the valley would provide that benefit to the Tuolumne. We would be restoring a natural flow regime by draining the reservoir to the wild and scenic section of the river.

This is very important and a great opportunity. We fully support more feasibility studies of restoring Hetch Hetchy Valley. But the question of how the valley is restored is of the utmost importance to us. We are concerned about possible tradeoffs. In the debate about restoring the valley, we hear a lot about the power and water tradeoffs. Those are important, but we also want to know about the environmental tradeoffs and what the impacts might be to the entire Tuolumne River watershed. New infrastructure would have to be built and new agreements between agencies would have to be worked out. So, our questions are: Where will the infrastructure go? How will that impact the Tuolumne? Will the new infrastructure and new agreements actually allow San Francisco to divert even more water and to exercise their full water rights, which they are not currently doing?

These are the types of concerns we have about how it will happen. It's a long-term issue. The Tuolumne River Trust is a small organization, and we really have to focus on immediate threats. Right now, we see the immediate threat of these diversions as something that requires our action and attention. So I'm really happy that we're starting this conversation about restoring the valley. But a similarly important debate focuses on whether we can meet the Bay Area's water needs in the future without degrading the national treasure that is the Tuolumne River. The answer is: yes we can, and yes we should. There's a lot more that we could be doing to use our water more wisely here in the Bay Area. The Bay Area lags far behind other regions in terms of water use efficiency and recycled water. There is no recycled water being used right

now in San Francisco. If we move to much more efficient irrigation methods, or to using recycled water for outdoor use, we wouldn't be putting our high-quality Hetch Hetchy drinking water on our lawns. That would save a lot of water, not only for our security, but also for the Tuolumne River.

By expanding our water supply options, we will have the ability to increase our reliability as well. The water system is very far away. The pipelines that carry the water pass over three earthquake faults. Furthermore, the system is not terribly reliable in droughts, as we have seen in the past. Right now, we rely on the Tuolumne River for eighty-five percent of our water. If we expand to other options, including recycled water and conservation, we will be improving our water security and also allowing a lot more water to stay in the Tuolumne River for salmon and for wildlife.

GRAY: Heather, thank you very much. Now, finally, Ray. I hope you'll include in your comments the answer to a question I jotted down. Ron said that your agency's view was that if there are no changes in water service and water quality, you would not necessarily oppose the restoration. I hope you will have a chance to address that.

McDEVITT: I will. I would like to explain the regional interest in the Hetch Hetchy Reservoir. By regional, I mean beyond San Francisco. A lot of people often associate San Francisco with Hetch Hetchy and believe that it is just a San Francisco interest. But the fact is, there are much broader community and regional interests in the system. Next, I'd like to briefly summarize the regional perspective on the proposal of draining the reservoir, as adopted by the Board of the Bay Area Water Supply Conservation Agency, my client. Afterwards, I'll give you my personal opinion.

First, I'll discuss the regional interest. What region is it? The area served by San Francisco from the Hetch Hetchy system and local sources extends from Hayward through the core of the Silicon Valley and then up to Daly City and South San Francisco. That's a large, rich, and diverse area. Its population is about 1.7 million, and it's projected to grow at a moderate rate of less than one percent per year, but persistently over the next thirty years, to about 1.9 million. It also is going to continue to generate jobs. There are about 1.1 million jobs, and that's projected to grow at a somewhat faster pace, as the commercial and industrial activity will outstrip population growth, at about twenty-seven percent over that thirty-year period.

The demand for water is projected to increase at a rate roughly comparable with that of the residential growth, maybe a bit less. This broad metropolitan area gets about seventy percent of the water it uses from the San Francisco system. The other thirty percent comes from a



combination of groundwater, desalinated brackish groundwater, some recycling, and purchases from the delta. The growth in demand for water is not due to either wasteful residential use or to sprawl, as is sometimes asserted. Residential water use per person in this area has declined over the last twenty years, since the drought of the mid-1980s, and it's projected that it will continue to decline. The growth in population is not a sprawling kind of wasteful diversion pattern of growth; it's infill.

The extra water is going to be used in the commercial and industrial sector. The manufacture of computer chips, computer equipment, and increasingly, biotechnology, use high-quality water in the products. The companies utilize water in their production that supports the economic well-being and the social welfare of the community. It's extremely important to recognize that the water is not simply being put on lawns. It's going into the economic engines that support the regional economy. This is not to say that we shouldn't be expanding, as in fact communities are. Redwood City spent millions of dollars building a recycled water plant to use for irrigation even though it encountered massive and emotional opposition from residents who were concerned about the safety of their children and persuaded the City Council to not use the reclaimed water in any parks or schools. One might think that they are backwards. But if you sat through those hearings, you would see the passion and emotion that those parents felt. There were batteries of doctors from Stanford Hospital who were there to assure them that no harm would come, but they were skeptical, concerned, and not satisfied. While recycling is certainly going to come, it is not going to be without struggles.

What's the regional perspective on the proposal to drain Hetch Hetchy? BAWSCA takes no position on whether the dam should be taken down. There is no emotional attachment to getting our water from the Hetch Hetchy Reservoir. They take a very pragmatic position, according to which certain conditions ought to be satisfied before this notion receives serious consideration. There shouldn't be any delay in the construction of the four billion dollar seismic rehabilitation project. There shouldn't be any reduction in the amount of water that can be reliably delivered to the Bay Area. There shouldn't be a decline in water quality, and there shouldn't be an increase in cost. Those seem like reasonable positions to take. I don't know that anyone has said, you should pay more, get lower quality water, or ration more drastically than is already required.

This idea has been seriously discussed in the popular press and in sessions such as this for over a year. I haven't found any real comfort that these conditions are capable of being satisfied. If you're going to take a reservoir down, you're going to have to store the water someplace else. The two major candidates we reviewed on paper were owned by other

government agencies. The Calaveras is opposed by the Tuolumne River Trust and by other environmental organizations. As is apparent from this discussion, the cost is apparently escalating. So there's no ready solution. As far as the cost goes, no one has volunteered to pay. The only suggestion I've heard is public subscriptions, like those used to raise money to rehabilitate the Statue of Liberty in the 1970s. I understand that analogizing the Statue of Liberty rehabilitation to raising the billions of dollars that would be necessary for this is cockeyed optimism. The Statue of Liberty is an iconic figure, the work was performed at the time of the Bicentennial, maybe \$100 million was raised, and most of it probably came from oil companies to ingratiate themselves with the Interior Department.

The BAWSCA position on this is a mature and responsible one. Now I come to my opinion. I'm speaking only for myself and these views are strictly personal. I think restoration is a bad idea. Why? Because I think the status quo is behind. I think that draining it is not worth the cost. Why is the status quo behind? The lake is not out of place because there are many glacier lakes in the area. People go to appreciate the beauty of the lakes. The dam is not impeding any migratory fish. Their ability to migrate has been blocked by a much larger dam miles downstream. The valley is tranquil, the waterfalls are admirable and totally accessible, and people can see and enjoy the great majority of the Tuolumne River watershed via the trail system. Over ninety percent of the stream miles on federal lands are completely accessible from the headwaters of the Tuolumne to the Don Pedro. So it's not as if the existence of the reservoir keeps people from enjoying the Tuolumne River. If you go on the web and look up "Tuolumne River," most of what you see is ads for whitewater rafting companies that utilize the water flowing in the river.

I'm influenced by camping experiences as a young child. When I was five or six, driving along the road from the camp up to the dam, and just coming around the turn in the road, I looked ahead and saw, from the ground-level perspective, this white, arched, concrete dam against the blue of the water and the gray of the cliffs. I was astounded. I thought it was an absolutely beautiful scene. I understand that aesthetic judgments are personal. But I think it is graceful and utilitarian architecture, an engineering icon in its own right, and its construction is very rich in California history. Only 0.2% of the Park is off-limits as a result of the inundation of the valley. The surface area of the lake is 1900 acres, and the size of the Park is 750,000 acres. So that gives you some perspective about the ability to access the park.

What about the notion that this is what we ought to spend our money on, that we ought to expand recreational activity by making national parks in wilderness areas more accessible? Well, visits to

Yosemite have actually decreased. The number of visitors peaked in 1996, with 2004 levels roughly comparable to those in 1987, even though there are nine million more people in California. That's not unique to Yosemite. There are three other national parks that are the closest substitutes for Yosemite, all in the Sierra. The trend is either flat or down from 1980 to now, even though the population of California has more than doubled in that period of time. Either fewer people are going or people are going less frequently. A subset statistic of the total visitation number counts how many people are camping in these four parks: Lassen, King's Canyon, Sequoia, and Yosemite. The results do not indicate that we need to provide more of that kind of activity. Surveys by the California Department of Parks and Recreation show that Californians want more developed parks in close proximity to metropolitan areas. That's what the increasing population demands. Surveys of recreational activities found that the characteristics of people who are going back-country camping are as follows: they identify themselves as environmental activists and make more than \$75,000 per year. That's an interesting demographic.

So that brings us to the question of choice, which isn't a legal question. Resources and capital are limited, so how many billions of dollars is this change of scenery worth? One? Five? Ten? My answer is none. I believe that we would be expending resources to advance the aesthetic and recreational preferences of an elite, over-privileged class, at the expense of the great majority of people in California who need recreation. So that is my personal view, not attributable at all to the organization that I represent. But I strongly believe that. Thanks a lot.

GRAY: Great, thank you. I promised time for questions and comments from the audience.

AUDIENCE MEMBER: I'm interested in the pipelines that run across earthquake faults. If we got our water from Calaveras or someplace closer, wouldn't that be helpful?

BEHAR: There's a fault under Calaveras as well. Dam designs have to account for that. The WSIP, however, is spending \$4.2 billion, in part to address seismic safety issues. I'm not an engineer, so I can't tell what the level of increase in safety to the water supply is. But it's a lot better than what we're doing now.

AUDIENCE MEMBER: Picking up where Ray left off about the cost of the project, what could that money do if it were put to some other, environmentally friendly purpose?

BEHAR: One counter to my argument about Calaveras is that San Francisco and its customers should get our water out of the delta. That might be cheaper under some circumstances. Personally, I'm not so sure. However, the delta right now is in a state of ecological collapse. Deferred

environmental restoration there totals in the billions of dollars. The CALFED Bay-Delta Program's budget for addressing the delta issue is about fifteen billion dollars. But it only gets about \$50 or \$100 million a year. There's huge deferred need there due to ecological collapse. You'll probably hear proposals down the road that San Francisco and its customers should get water out of the delta. That's the opposite of what needs to happen there. I think the opportunity cost of doing such a project and investing scarce restoration dollars in taking down a system and rebuilding it somewhere else is tremendous. There are tremendous ecological and environmental restoration needs in California that would not be addressed if that occurred.

GOOD: One thing we don't need in this discussion is hyperbole. The words we just heard, "taking down the system," are totally absurd. No one at Environmental Defense and no one at Restore Hetch Hetchy has ever advocated taking down the system. We are responsible people who have advocated win-win outcomes for this proposal. Of course there are a lot of challenges out there with the Katrina situation, the delta, and levee reconstruction. Assemblymember Lois Wolk, who chairs the Water Committee in the State Assembly, is very intimately involved in the discussions on levee reconstruction. She's also very involved with the restoration of Hetch Hetchy. She says both those things can be accomplished with win-win outcomes for people.

I just want to address one thing that Ray said about the exclusivity of our national parks. John Burton, former State Senator from San Francisco, had this to say about parks: "Government parks are where working people can go. The rich can create their own preserves, buy 200-acre ranches. Parks provide a tremendous outdoor outlet for hundreds of thousands of people, just average Californians and Americans. That's the dream of our national parks. They are accessible to all."

McDEVITT: I don't disagree with that at all, and I think it's entirely consistent with my view. I think we ought to be buying more parkland. The question is where. Should we be looking for places where there's a reservoir that has to be taken down, thereby sacrificing clean hydropower?

GOOD: No. To say that the status quo is benign is absurd. The status quo is not benign. Having 300 feet of water on top of Hetch Hetchy Valley in Yosemite National Park is not a benign remedy.

GRAY: Thank you everyone.

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